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Taxonomy and distribution of *Gnophos corsica* Oberthür, 1913 (*) (Lepidoptera, Geometridae)

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Gnophos corsica was first described by Oberthür as a melanotic variety of *Gnophos variegata* Duponchel, 1830 : "... et un ♂ et une ♀ d'une variété très obscure de Corse (Pl. CLXXIX, n° 1745 et 1746), morphe paraissant constante et à laquelle je donne le nom de *Corsica* ..." (Oberthür C., 1913 – Ét. Lép. comp. *7* (1) : 301).

Later on, Prout (1915) treated *Gnophos corsica* Mill. (sic !) as a Corsican form of *Gnophos variegata*.

Finally, Wehrli (1951) suggested that *Gnophos corsica* should be considered as a separate species. On the basis of external morphology and the shape of the genitalia, he included it in his new subgenus *Euchrognophos* (type species : *Gnophos variegata*).

A comparison of the two above mentioned species clearly shows such an extreme morphological similarity to each other, that they can be considered as criptical species.

For this reason I thought it interesting to point out some discriminant characters with regard to their external and internal morphology, more exactly outlining, at the same time, their geographical range.

Material examined

Gnophos corsica

Sardegna : Sassari, Ottava, 7.X.1962, 1 ♂ ; Monte Limbara, 15.VII.1967, 1 ♀ (Coll. Istituto Entomologia Agraria, Sassari) ; Cagliari, Solemnis, 6 ♂♂ and ♀♀ ; 20.IV.1984, 1 ♀ ; 22.IV.1984, 1 ♂ ; 23.IV.1984, 1 ♂ ; 27.IX.1984, 1 ♂ (leg. and Coll. Siegel C.) ;

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Cagliari, Soleminis, 12.VI.1983, 1 ♂ ; 30.V.1983, 1 ♀ ; 11.XI.1983, 1 ♀ leg. Siegel C. (Coll. Campi-Raineri) ; Nuoro, Suprammonte di Orgosolo, Funtana Bona, IV-V.1983, 2 ♂♂ leg. V. Raineri (Coll. Campi-Raineri).

Is. Montecristo : la Villa, 16.V.1983, 1 ♂ ; 17.V.1983, 1 ♀ leg. R. Poggi (Coll. Museo Civico St. Naturale "G. Doria" Genova, abbreviated MCSN "G. Doria" GE) ; Valle dei Lecci, 27.IX.1983, 7 ♂♂ leg. V. Raineri (3 given to MCSN "G. Doria" GE and 4 in Coll. Campi-Raineri) ; la Villa, 28.IX.1983, 1 ♂ leg. V. Raineri (Coll. Campi-Raineri).

Is. Giglio : Is. Giglio, IX.1901, 1 ♀ leg. G. Doria (Coll. MCSN "G. Doria" GE).

Gnophos variegata :

Abruzzo : S. Potito (AQ), 29.VIII.1953, 1 ♂ ; 3.IX.1953, 1 ♂ ; 27.VIII.1955, 4 ♂♂ ; 17.IX.1956, 4 ♂♂ ; 23.IX.1956, 1 ♂ ; 29.IX.1956, 2 ♂♂ ; 13.VIII.1957, 1 ♂ ; 22.VIII.1957, 1 ♂ ; 10.VIII.1958, 1 ♂ ; 27.VIII.1954, 1 ♀ ; 23.IX.1956, 1 ♀ ; Gagliano Aterno (AQ), 27.VIII.1951, 1 ♂ ; Castel del Monte (AQ), 20.VIII.1947, 1 ♂ (ex. Coll. Barbera in MCSN "G. Doria" GE).

Lazio : M.ti Simbruini, Filettino (FR), VIII.1941, 1 ♂ ; 26.VIII.1973, 2 ♂♂ ; 2.IX.1973, 1 ♂ ; 19.X.1973, 1 ♂ (ex. Coll. Barbera in MCSN "G. Doria" GE).

Calabria : M.ti della Sila, Spezzano (CS), 12.VII.1968, 1 ♂ (ex. Coll. Barbera in MCSN "G. Doria" GE).

External morphology

The ground colour of the adults is far too variable to allow a positive identification. Specimens of *Gnophos corsica* that I have collected on the Supramonte di Orgosolo (NU), for example, show the same range of colours as can be observed in *Gnophos variegata*.

Contrary to the observations of de Laever (1978), the size of *Gnophos corsica* is not smaller than that of many other species in the same genus and in particular it does not significantly differ from that of *Gnophos variegata* (*Gnophos corsica* average wing span 22.2 ± .45 (S.E.M.), *Gnophos variegata* average wing span 22.13 ± .39 (S.E.M.)).

The male antennomera of *Gnophos corsica* have very rounded lateral teeth whereas these are much sharper and pointed in *Gnophos variegata* (Figs. 1, 2).

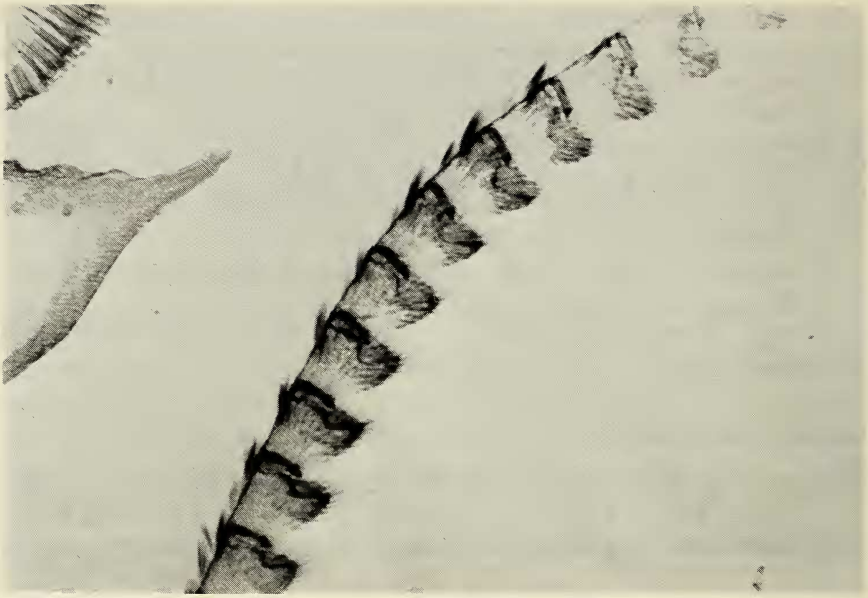

Fig. 1. Antennomera of *Gnophos corsica* (50×) ♂.

Fig. 2. Antennomera of *Gnophos variegata* (50×) ♂.

Genitalia : Male

In the valva a long tapering spine extends from the costa of *Gnophos corsica*, which is always lacking in *Gnophos variegata*, while the apex of the sacculus is much more pointed and not bifurcate. (Some other differences can be derived from figs. 3-6).

Female

The main differences are to be found in the shape of the ostium bursae and ductus bursae, as can easily be seen in figs. 7, 8.

In conclusion, one can assert that *Gnophos corsica* and *Gnophos variegata* are distinguishable only by an examination of the male and female genitalia and of the male's antennomera.

Distribution

It is of interest that the specimen from Isola del Giglio (Tuscan Archipelago) mentioned by Rocci and Turati (1925) as *Gnophos variegata* is on the contrary a ♀ of *Gnophos corsica*.

The same applies to the single specimen from Sardinia (Sassari, Ottava) quoted as *Gnophos variegata* by Prota (1973).

All material from Sardinia that I was able to study up till now also proved to belong to *Gnophos corsica*.

The presence of *Gnophos variegata* on this island therefore has yet to be demonstrated.

The Spanish material mentioned by Agenjo (1952), 1 ♂ from Albarracin, Pr. Teruel, and 1 ♀ from Sepulveda, Pr. Segovia and identified by him as *Gnophos variegata*, also belong to *Gnophos corsica*, as is clearly demonstrated by the examination of both female and male genitalia (see Agenjo, 1952 : pls 18, 19).

Gnophos corsica, in conclusion, ranges from CE Spain, the Islands of Sardinia and Corsica, as far East as the Tuscan Archipelago (Is. Giglio and Montecristo). It is therefore a species with a W. Mediterranean, perhaps Palaeotyrrhenian distribution.

Gnophos variegata, on the contrary, is known from N. Africa, Spain, central South Europe, E. Europe and Asia Minor. It is a species with a Mediterranean distribution.

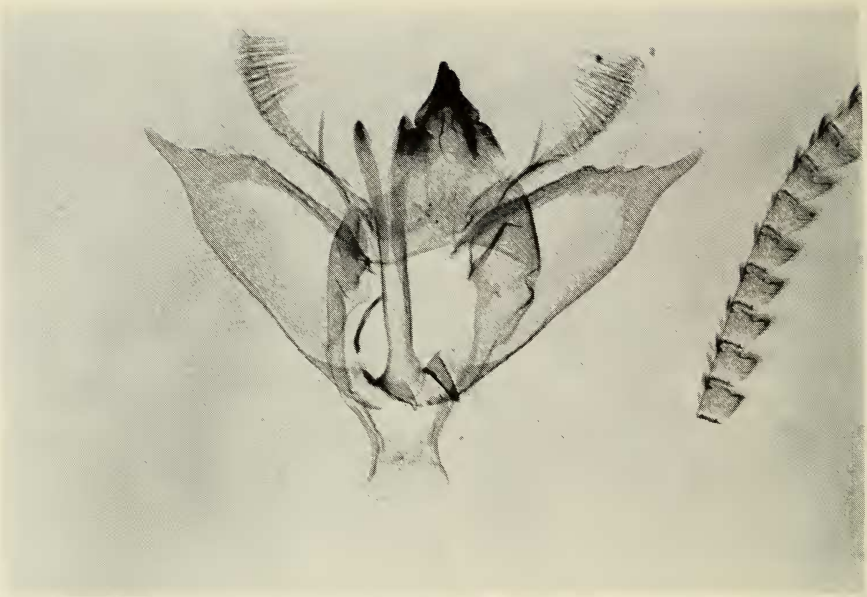

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Fig. 3, 4. Valvae (3) 25× and aedeagus (4) 50× of *Gnophos corsica* ♂.

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Fig. 5, 6. Valvae (5) and aedeagus (6) of *Gnophos variegata* (25×) ♂.

Fig. 7. Bursa of *Gnophos corsica* (25×) ♀.

Fig. 8. Bursa of *Gnophos variegata* (25×) ♀.

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References

Agenjo, R., 1952. – Faunula Lepidopterologica Almeriense. Consejo Superior de Investigaciones Cientificas : 1-370 + 24 Tvv.

Bytinski-Salz, 1934. – Ein Beitrag zur Kenntnis der Lepidopterenfauna Sardiniens. *Int. Ent. Z.*, Guben, **28** : 133-137, 165-169 + 1 Tf.

Bytinski-Salz, 1936. – Secondo contributo alla conoscenza della Lepidotterofauna della Sardegna. *Mem. Soc. ent. ital.*, Genova, **15** : 194-212.

Forster, W., Wohlfahrt, Th. A., 1981. – Die Schmetterlinge Mitteleuropas, Spanner (Geometridae). Franckh'sche verlagshandlung Stuttgart, **5** : 1-312 + 26 Tvv.

Hartig, F., Amsel, H. G., 1951. – Lepidoptera Sardinica. *Fragmenta Entomologica*, Roma, **1** : 1-159.

Herbulot, C., 1968. – Sur quelques Geometridae de Sardaigne. *Alexanor*, Paris, **5** : 231-232.

Herbulot, C., 1970. – Sur quelques Geometridae de Sardaigne (2e note). *Alexanor*, Paris, **6** : 247-248.

Laever, E. De, 1975. – Le genre *Gnophos* Tr. (Geometridae). *Bull. C.L.B./B.L.K.*, Bruxelles, **4** (6) : 108-109.

Laever, E. De, 1978. – *Gnophos (Eucrognophos) corsica* Obth. (Geometridae). *Bull. C.L.B./B.L.K.*, Bruxelles, **7** (3) : 47-48.

Leraut, P., 1980. – Liste systématique et synonymique des Lépidoptères de France, Belgique et Corse. *Suppl. Alexanor et Bull. Soc. ent. Fr.*, Paris : 1-334.

Mariani, M., 1940-41. – Fauna Lepidopterorum Italiae, Parte I. Catalogo ragionato dei Lepidotteri d'Italia. *G. Sci. nat. econ.*, Palermo, **42** (3) : 81-110.

Mola, P., 1919. – Flora e Lepidotterofauna sarda (Regione di Bosa), Sassari : 1-69.

Oberthür, C., 1913. – Études de Lépidoptérologie comparée. Éd. Oberthür, Rennes, **7** : 1-679 + 197 Tvv.

Pionneau, P., 1909. – Liste d'espèces et variétés de Lépidoptères recueillis en Sicilie et Sardaigne. *L'Échange*, Lyon, **25** (291) : 118-120 ; **25** (292) : 124-125.

Prota, R., 1973. – Contributi alla conoscenza della lepidotterofauna sarda. I. Specie catturate alla lampada nella Sardegna Nord-Occidentale. *Estr. Studi Sassaresi sez. III*, **21** (2) : 705-793.

Prout, L. B., 1915. – In Seitz : Die Gross-Schmetterlinge der Erde. I. Abteilung : Die Gross-Schmetterlinge des Palaarktischen Faunengebietes. Die spannerartigen Nachtfalter. Ed. Verlag Stuttgart, **4** : 1-479 + 25 Tfln.

Rocci, U., Turati, E., 1925. – Materiali per una fauna dell'arcipelago Toscano. XVIII. Lepidotteri dell'Isola del Giglio. *Annali Mus. civ. Stor. nat. Giacomo Doria*, Genova, **50** : 355-362.

Schmidlin, A., 1964. – Übersicht über die europäischen Arten der Familie Geometridae (Lep.). *Mitt. ent. Ges. Basel*, **14** (4, 5) : 77-137.

Turati, E., 1913. – Un record entomologico. Materiali per una faunula dei Lepidotteri della Sardegna. *Atti Soc. ital. Sci. nat.*, Milano, **51** (3, 4) : 265-365 + 2 Tvv.

Wehrli, E., 1951. – Une nouvelle classification du genre *Gnophos* Tr. *Lambillionea*, Bruxelles, **51** (3, 4) : 22-30.